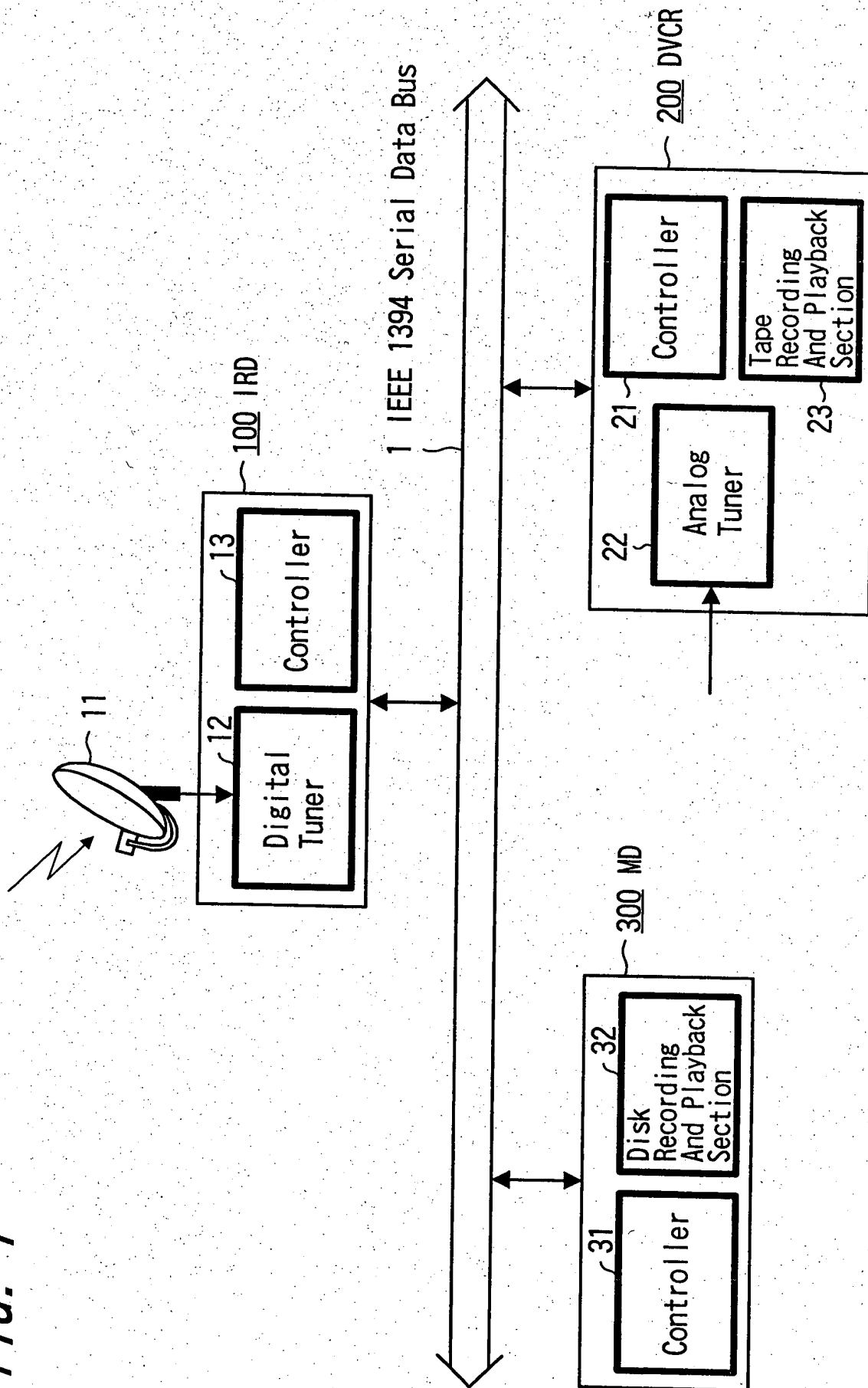


FIG. 1



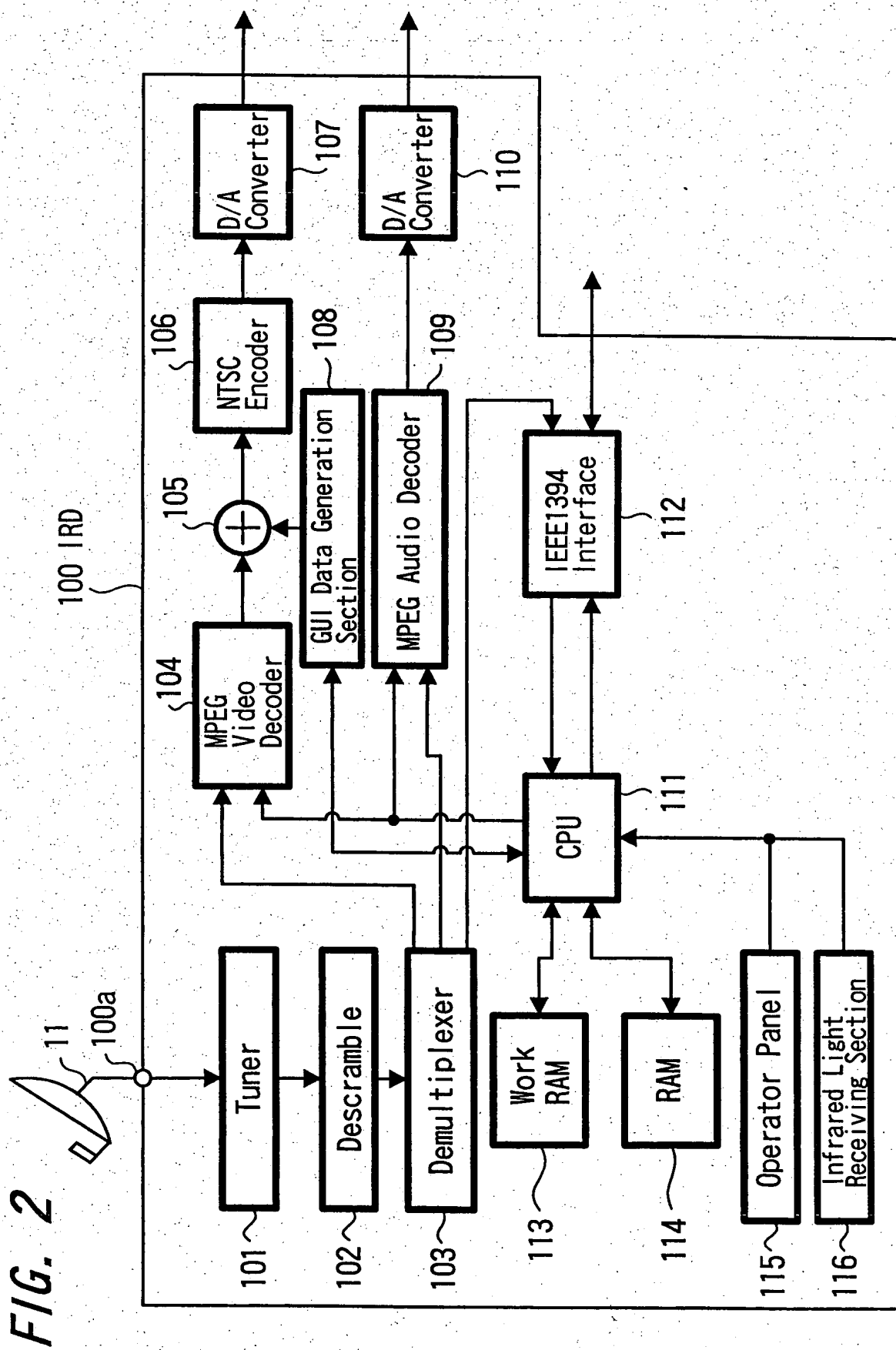


FIG. 3

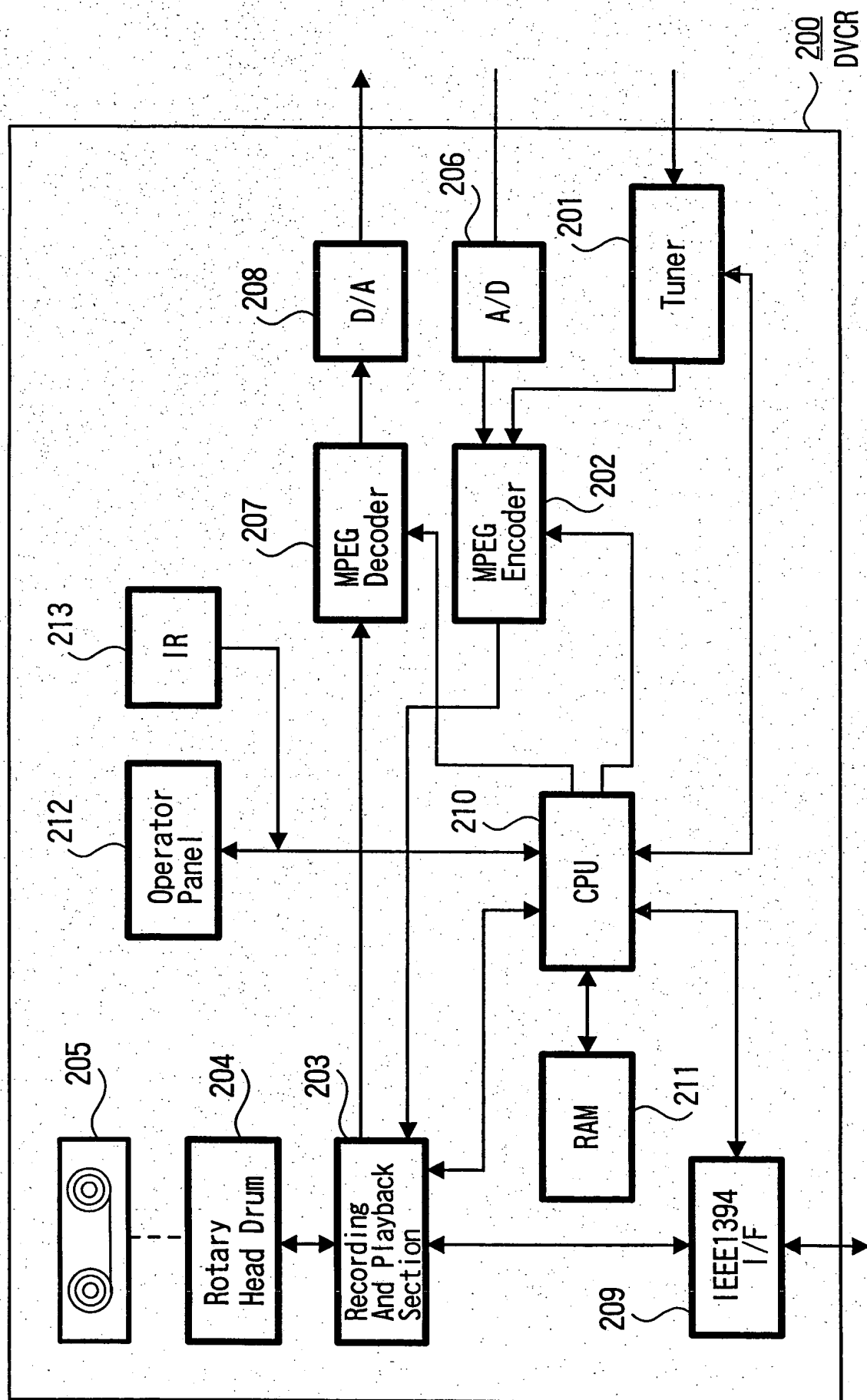


FIG. 4

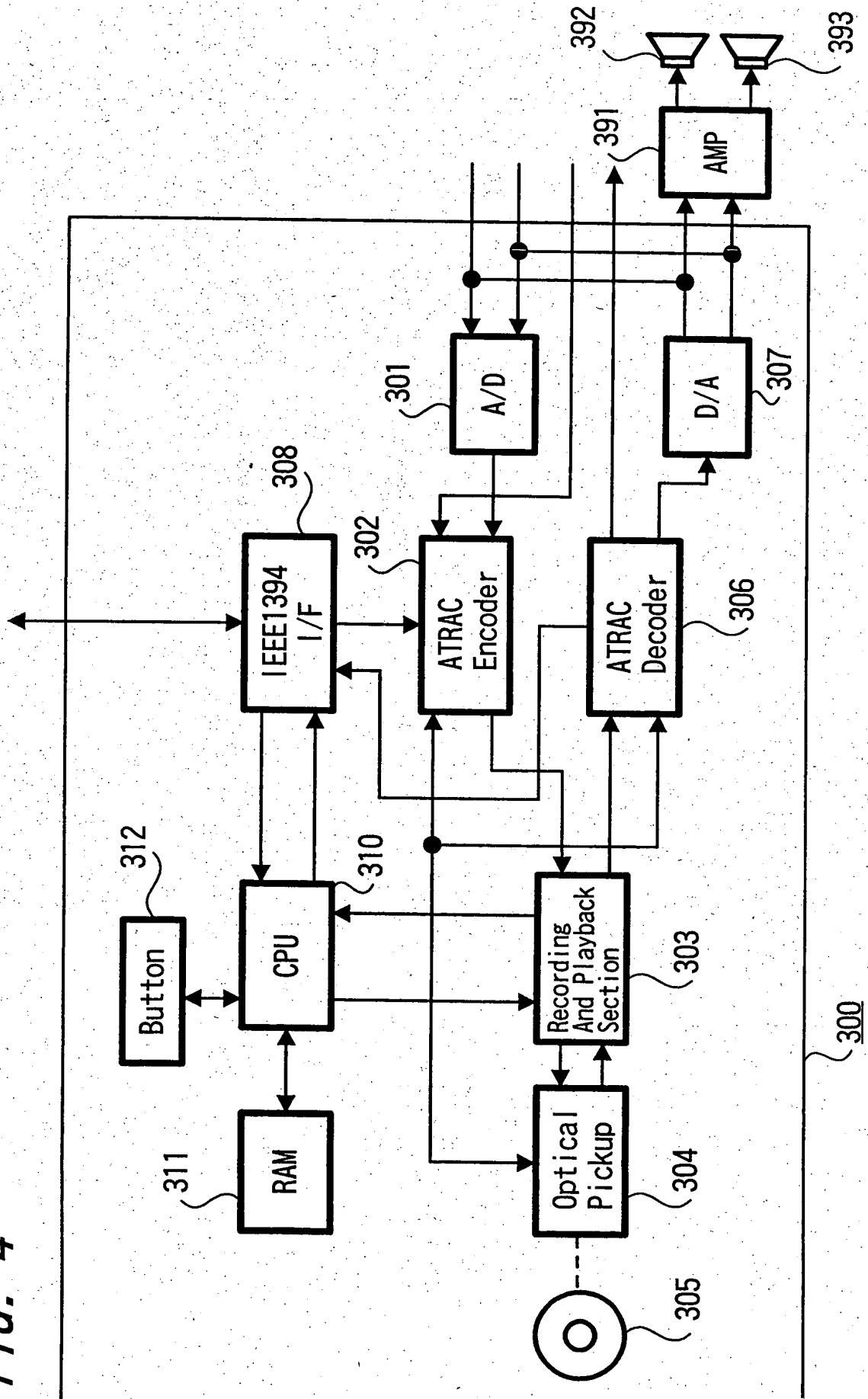


FIG. 5

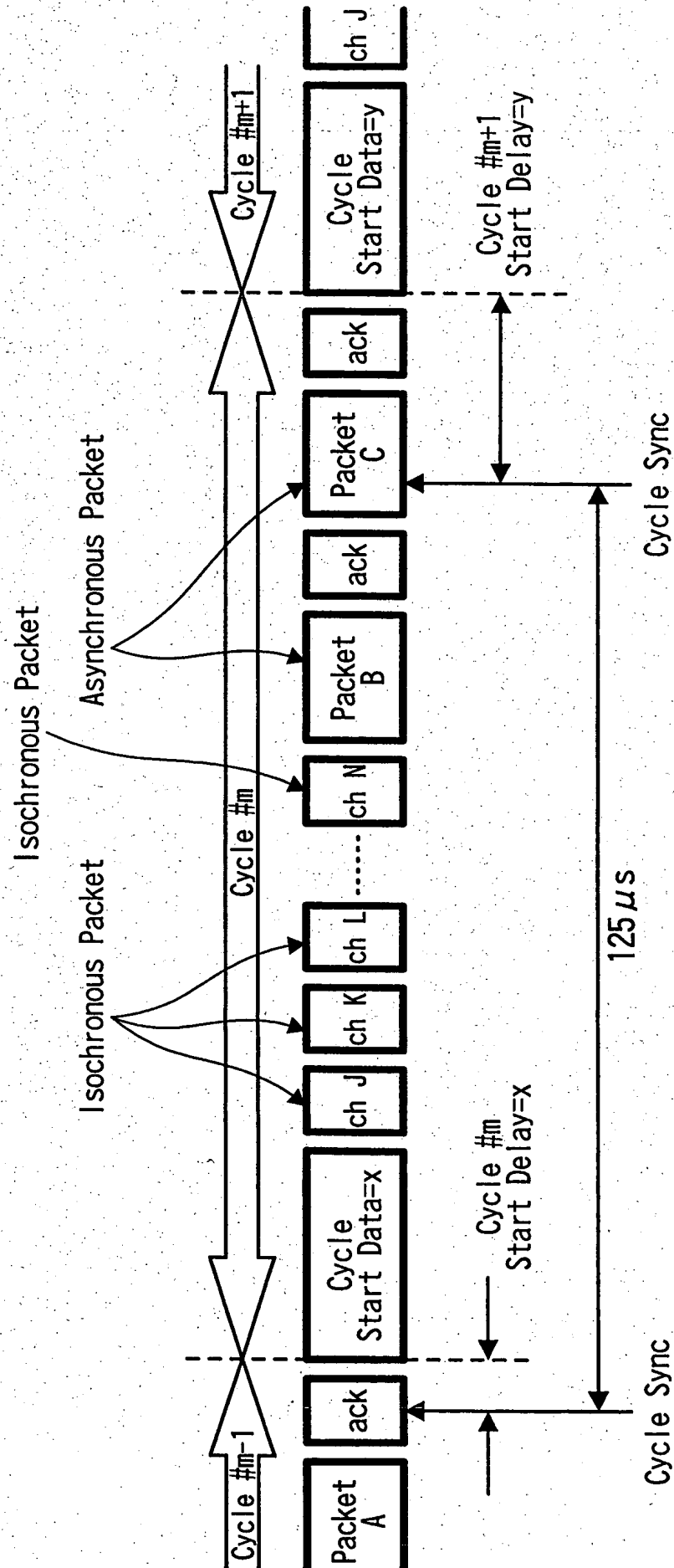


FIG. 6

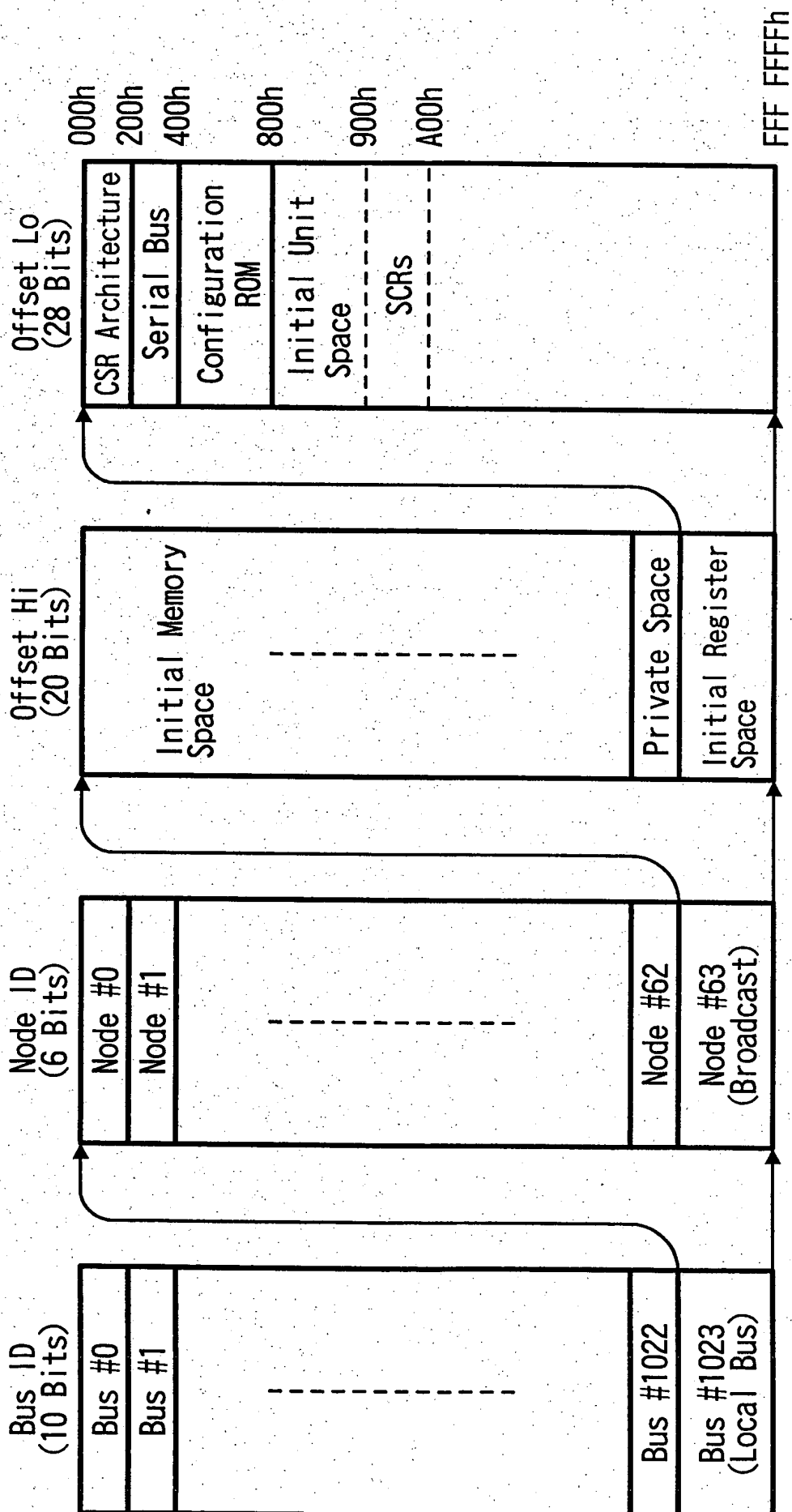


FIG. 7

Offset	Name	Function
000h	State Clear	State And Control Information
004h	State Set	State Clear Bit Is Set
008h	Node ID	16-Bit Node ID Is Indicated
00Ch	Reset Start	Command Reset Is Started
018-01Ch	Split Timeout	Maximum Split Time Is Prescribed
200h	Cycle Time	Cycle Time
210h	Busy Timeout	Retry Limit Is Prescribed
21Ch	Bus Manager	Bus Manager ID Is Indicated
220h	Band Usage Situation	Band Which Can Be Assigned to Isochronous Communication Is Indicated
224h-228h	Channel Usage Situation	Usage Situation of Each Channel Is Indicated

FIG. 8

900h	Output Master Plug Register
904h	Output Plug Control Register #0
908h	Output Plug Control Register #1
⋮	⋮
97Ch	Output Plug Control Register #30
980h	Input Master Plug Register
984h	Input Plug Control Register #0
988h	Input Plug Control Register #1
⋮	⋮
9FCh	Input Plug Control Register #30

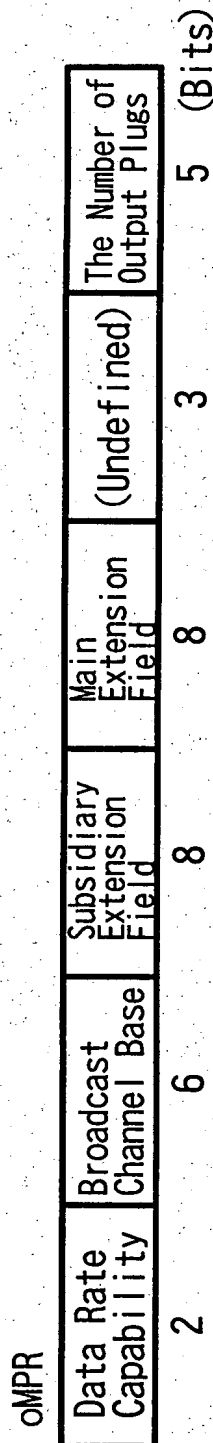


FIG. 9A

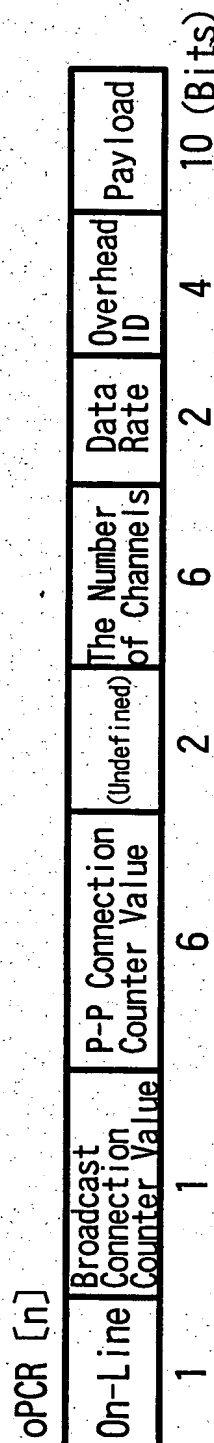


FIG. 9B

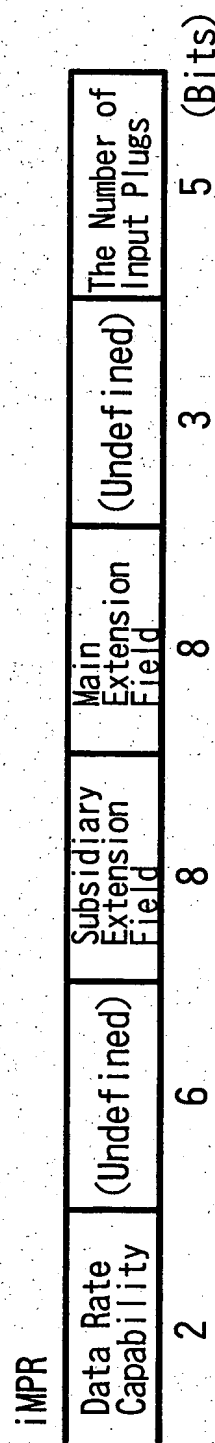


FIG. 9C

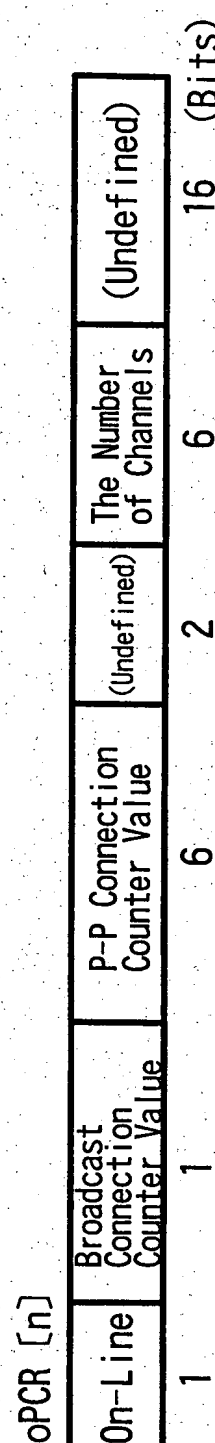


FIG. 9D

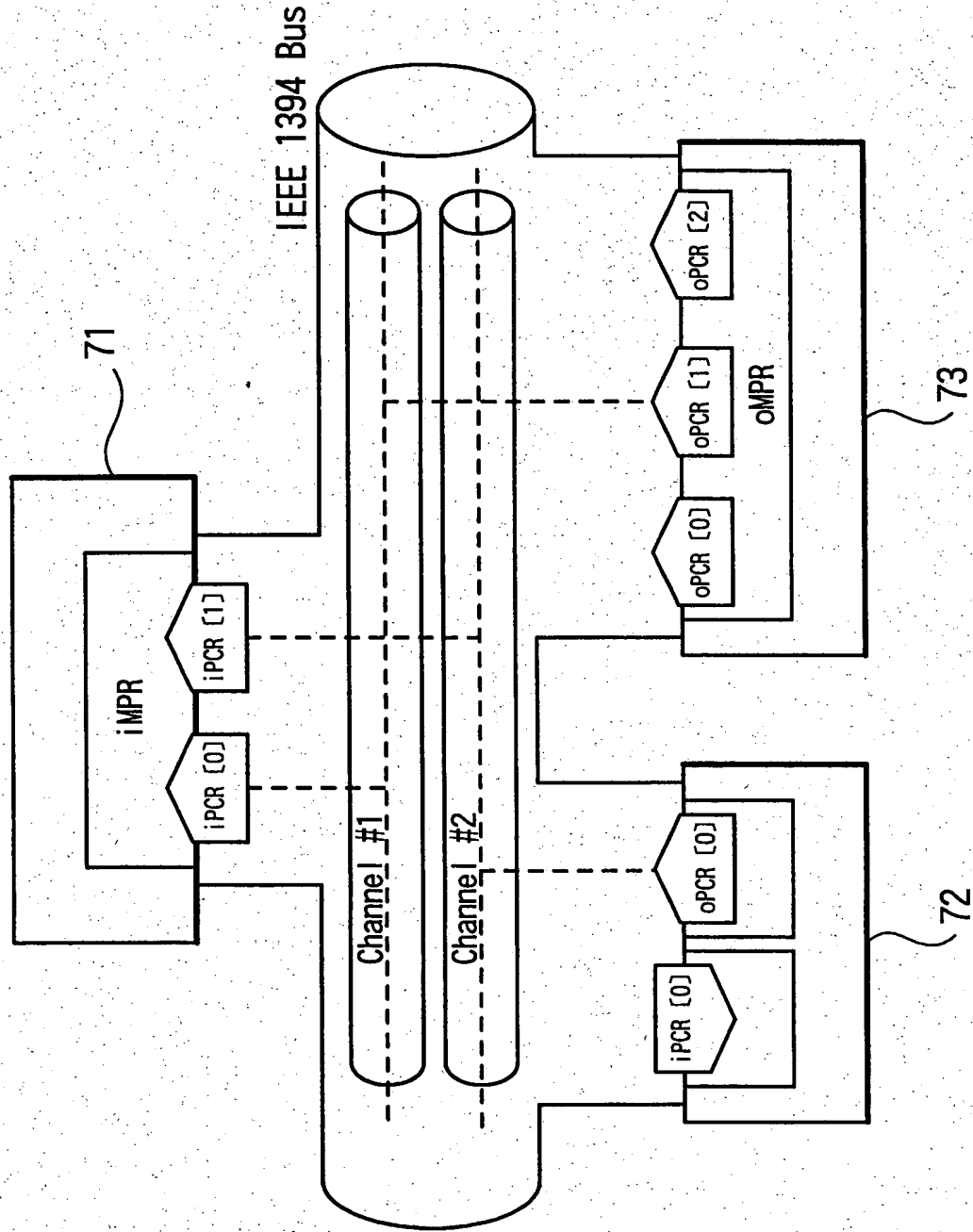


FIG. 11

FIG. 11

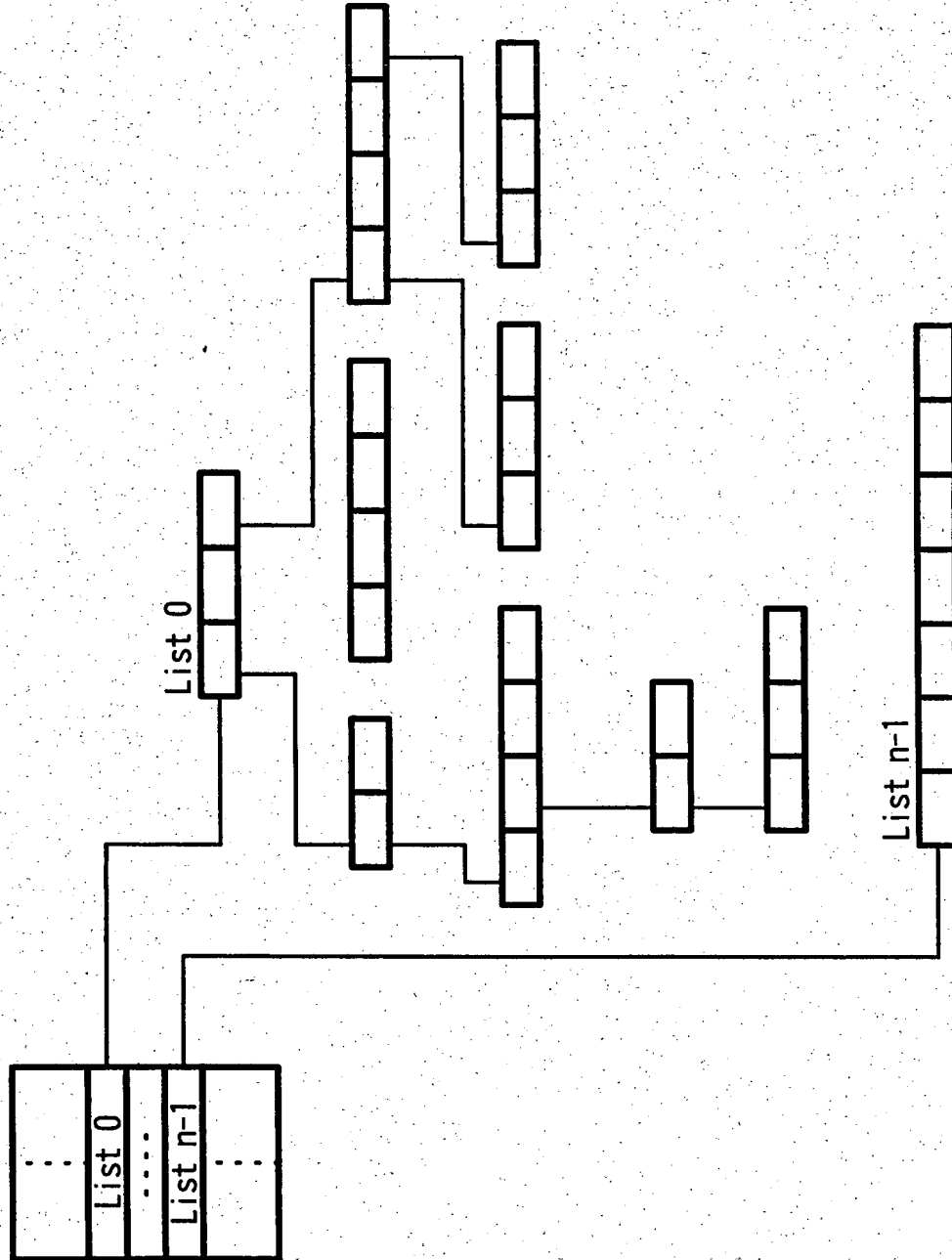


FIG. 12

General Subunit Descriptor	
address	Contents
00 00 ₁₆	Descriptor Length
00 01 ₁₆	
00 02 ₁₆	Generation ID
00 03 ₁₆	List ID Size
00 04 ₁₆	Object ID Size
00 05 ₁₆	Object Position Size
00 06 ₁₆	The Number of Root Object Lists (n)
00 07 ₁₆	
00 08 ₁₆	Root Object List ID 0
⋮	
⋮	⋮
⋮	Root Object List ID n-1
⋮	
⋮	Subunit Dependent Data Length
⋮	
⋮	Subunit Dependent Guide
⋮	
⋮	
⋮	Manufacturer Dependent Data Length
⋮	
⋮	Manufacturer Dependent Guide
⋮	
⋮	

FIG. 13

Assignment of Generation ID Values	
Generation ID	Meaning
00 ₁₆	AV/C General Version 3.0 Standard
Other Values	Undefined

FIG. 14

Assignment of List ID Values	
Value	List
0000 ₁₆ 0FFF ₁₆	Undefined
1000 ₁₆ 3FFF ₁₆	Value Specific to Subunit Type
4000 ₁₆ FFFF ₁₆	Undefined
1 000 ₁₆	Value Specific to Subunit Type

FIG. 15

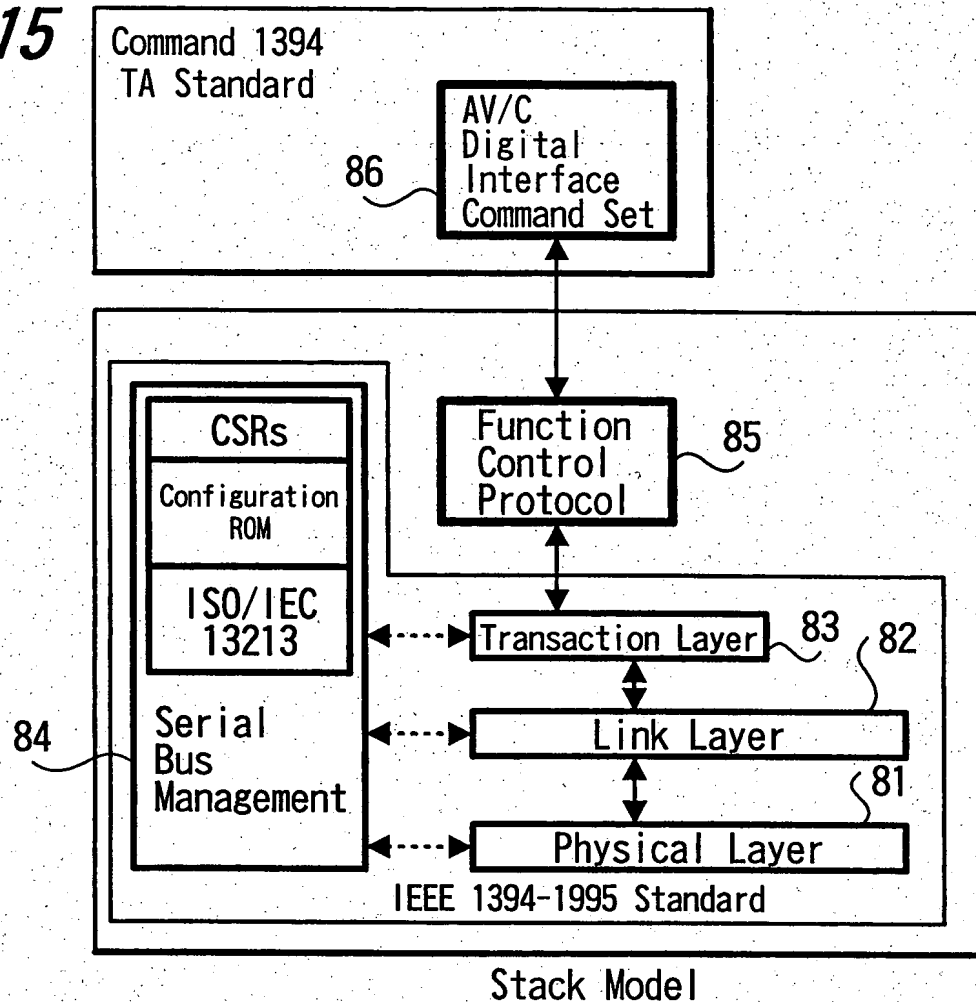
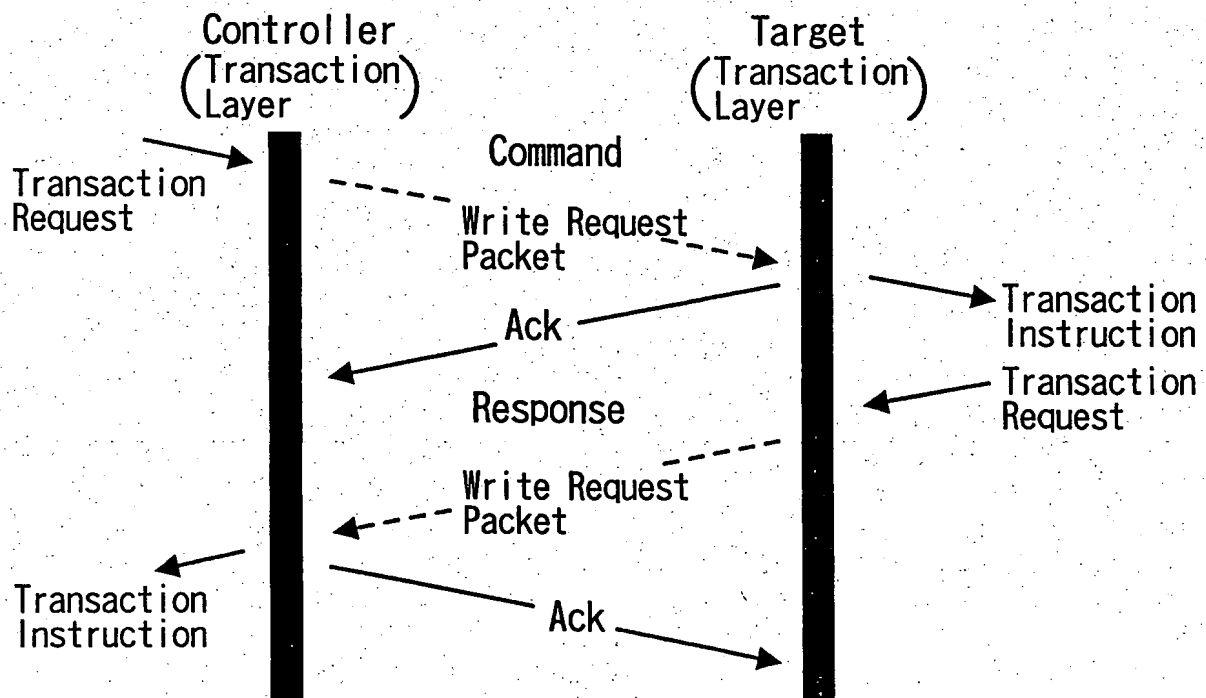


FIG. 16



Command And Response of FCP

FIG. 17

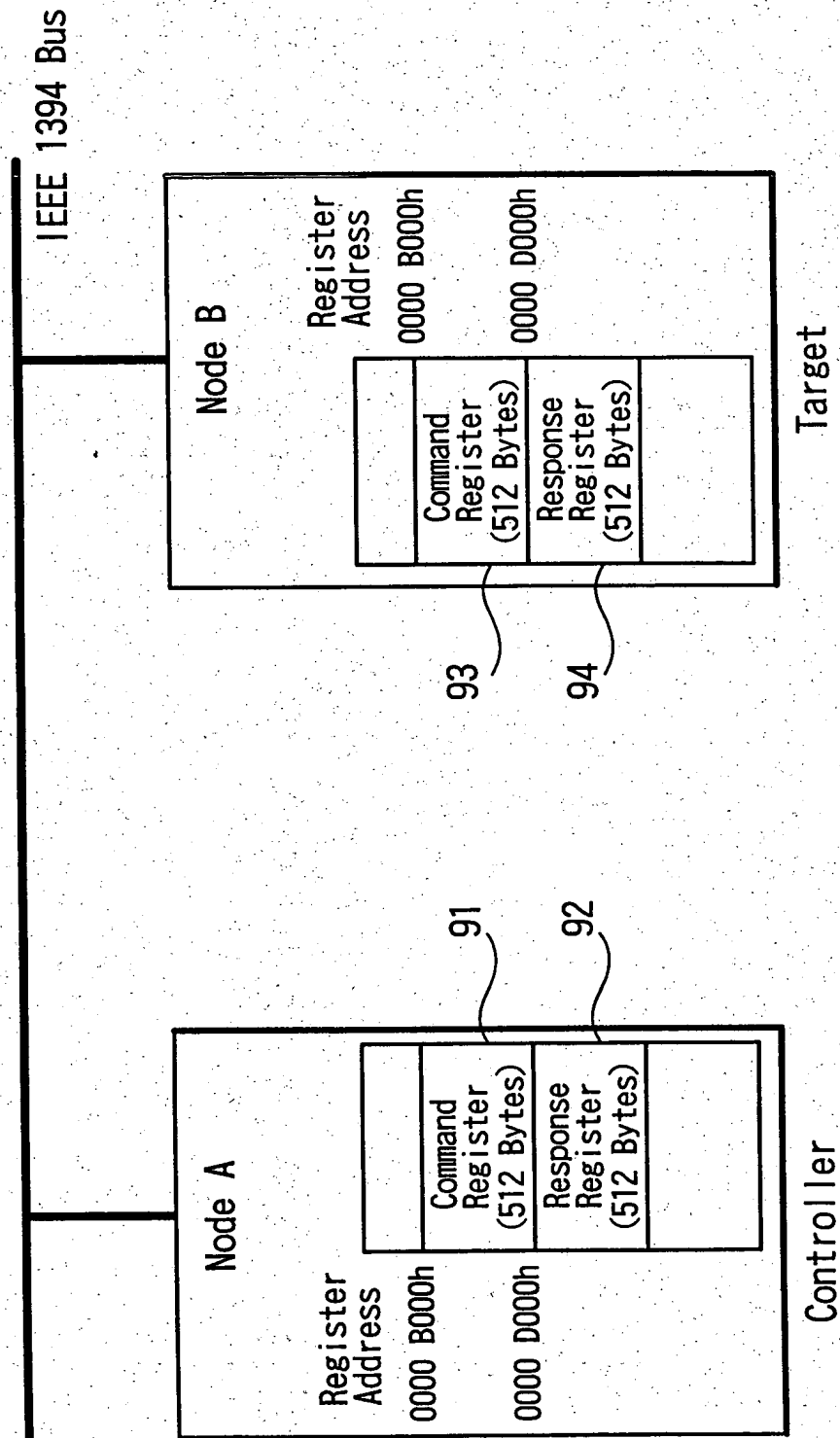


FIG. 18

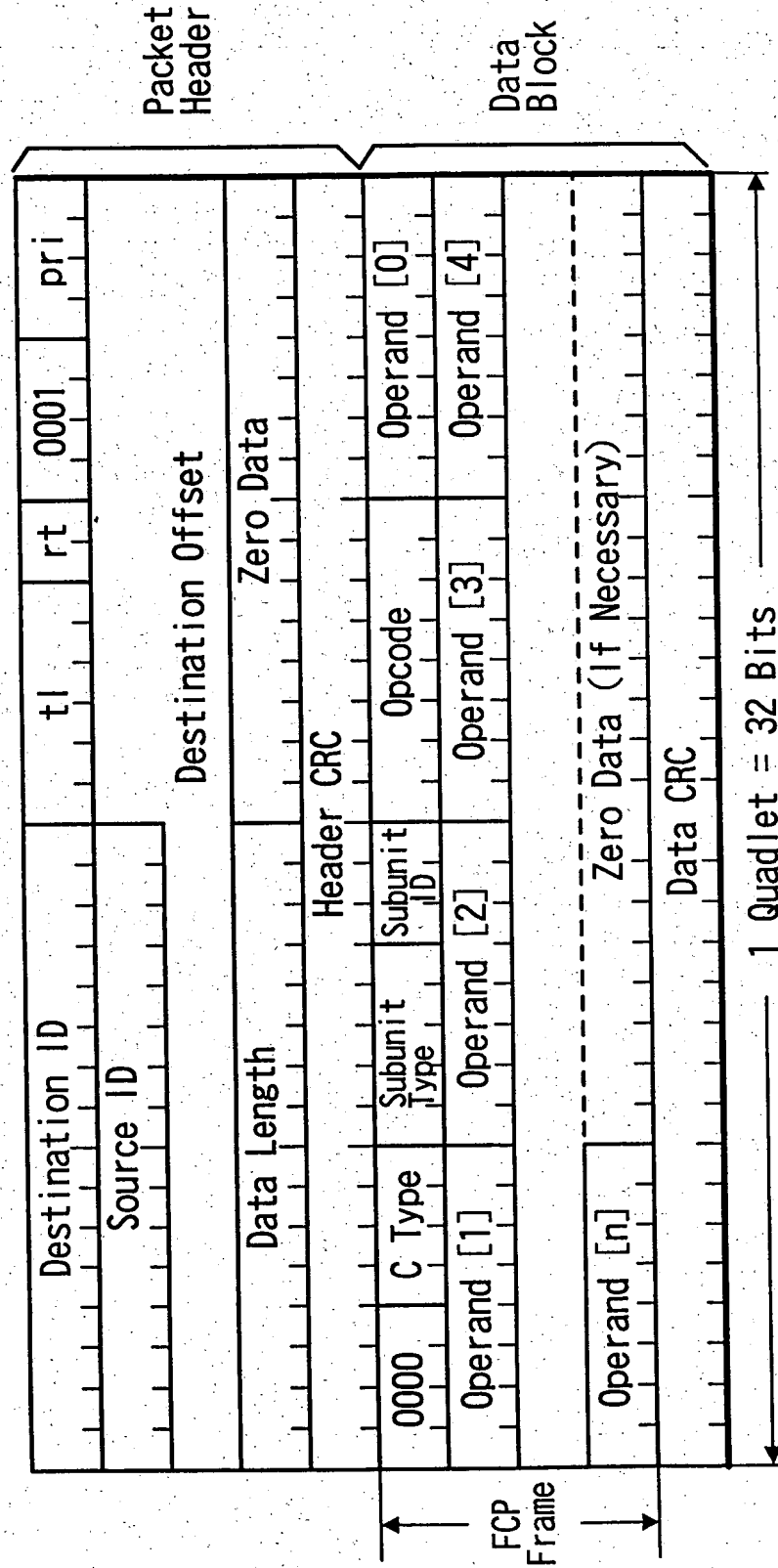


FIG. 19

Command Type/Response		Subunit Type		Opcode: Operation Code		
Command	0000	Control	00000	Video Monitor	00h	Vendor Dependent Value
	0001		?		50h	Search Mode
	0010		00011	Disk Recorder/Player	51h	Time Code
	0011				52h	ATN
	0100		00100	Tape Recorder/Player	60h	Memory Open
Response	0101	(Undefined)			61h	Memory Read
	?				62h	Memory Write
	0111				C1h	Load
	1000		00101	Tuner	C2h	Record
	1001		00111	Video Camera	C3h	Playback
	1010		01010	BBS	C4h	Rewind
	1011		11100	Vendor Dependent Value	?	
	1100		11101	Undefined		
	1101		11110	(Specific Subunit) (Type)		
	1110		11111	Unit		

FIG. 20A

AV/C		Tape Recorder /Player		Case of ID0		Playback		Forward Direction	
CTS=	0000	C Type=	0000	Subunit Type=	00100	id=	000	Opcode=	C3h
								Operand=	75h

FIG. 20B

AV/C		Tape Recorder /Player		Case of ID0		Playback		Forward Direction	
CTS=	0000	Response=	1001	Subunit Type=	00100	id=	000	Opcode=	C3h
								Operand=	75h

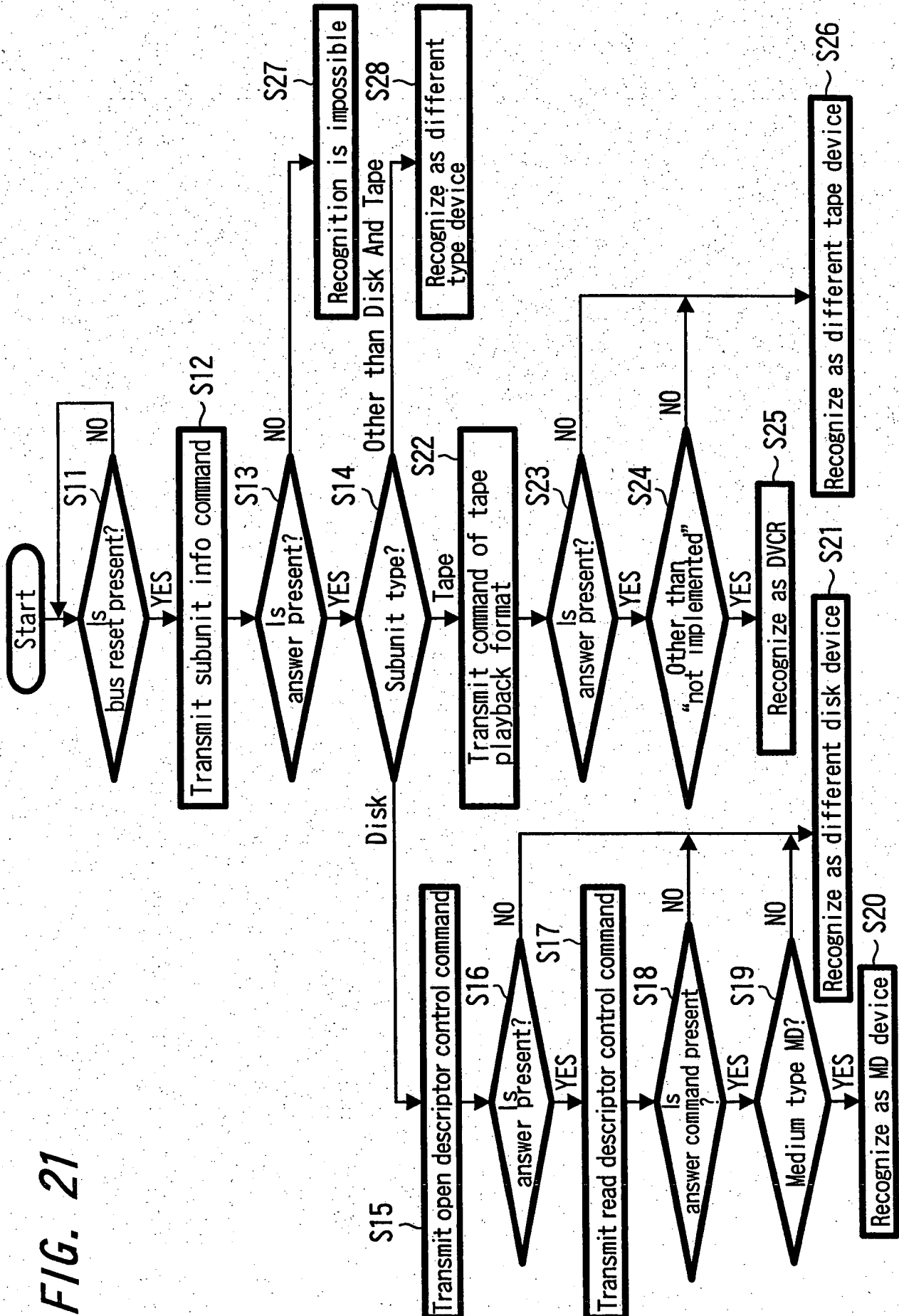


FIG. 22

	msb						lsb
Opcode	Subunit Info						
Operand[0]	0	Page			0	Extension Code	
Operand[1]	FF ₁₆						
...							
Operand[4]							

Subunit Info Status Command Format

FIG. 23

	msb						lsb
Opcode	Subunit Info						
Operand[0]	0	Page			0	Extension Code	
Operand[1]	Page Data						
...							
Operand[n]							

Subunit Info Response Format

FIG. 24

	msb						lsb
Opcode	Unit Info						
Operand[0]	FF ₁₆						
...							
Operand[4]							

Unit Info Status Command Format

FIG. 25

	msb						lsb
Opcode	Unit Info						
Operand[0]	0716						
Operand[1]	Unit Type					Unit	
Operand[2]	Company ID						
Operand[3]							
Operand[4]							

Unit Info Response Format

FIG. 26

Subunit Type	Meaning
00000	Video Monitor
00011	Disk Recorder/Player
00100	Tape Recorder/Player
00101	Tuner
00111	Video Camera
11100	Vendor Dependent Value

Subunit Type Encoding

FIG. 27

	msb						lsb
Opcode	Open Descriptor (08 ₁₆)						
Operand[0]	Data for Descriptor Identification						
Operand[1]							
:							
:							
:	Subfunction						
:	(Undefined)						

Open Descriptor Command

FIG. 28

	msb						lsb
Opcode	Read Descriptor (09 ₁₆)						
Operand[0]	Data for Descriptor Identification						
Operand[1]							
:							
:							
:	Read Result Status						
:	(Undefined)						
:	Data Length						
:							
:							
:	Address						
:							

Read Descriptor Command

FIG. 29

Disc Subunit Identifier Descriptor	
Address	Contents of Description
00 00 ₁₆	Descriptor Length
00 01 ₁₆	
00 02 ₁₆	Generation ID
00 03 ₁₆	Size of List ID
00 04 ₁₆	Size of Object ID
00 05 ₁₆	Size of Object Position
00 06 ₁₆	The Number of Root Object Lists(n)
00 07 ₁₆	
00 08 ₁₆	Root Object List ID [0]
:	
:	:
:	Root Object List ID [n-1]
:	
:	Disk Subunit Dependent Data Length
:	
:	Disk Subunit Dependent Information
:	
:	Vendor Dependent Data Length
:	
:	Vendor Dependent Information
:	

Disc Subunit Identifier Descriptor

FIG. 30

Address Offset	Contents
00 ₁₆	Disc Subunit Dependent Information Field Data Length
01 ₁₆	
02 ₁₆	Attribute
:	Version of Disk Subunit
:	The Number of Supported Medium Types(n)
:	Data [0] of Supported Medium Type
:	
:	
:	
:	:
:	Data [n-1] of Supported Medium Type
:	
:	
:	

Disc Subunit Dependent Information

FIG. 31

	msb							lsb
Opcode	Tape Playback Format(D3 ₁₆)							
Operand[0]	FF ₁₆							
...								
Operand[8]								

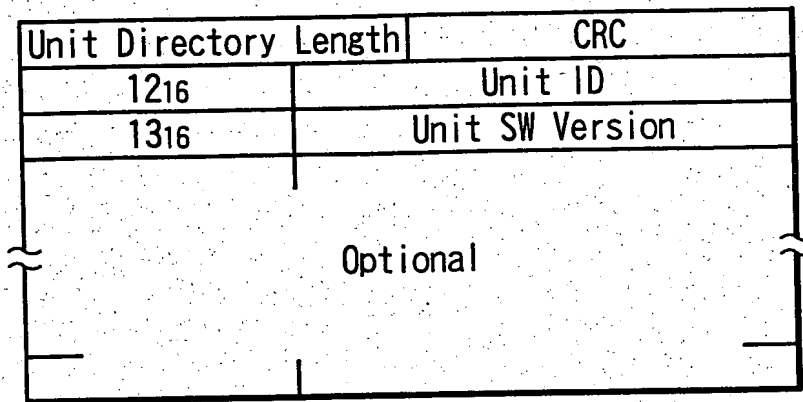
Tape Playback Format Status Command Format

FIG. 32

	msb							lsb
Opcode	Tape Playback Format(D3 ₁₆)							
Operand[0]	Medium Type					Format Parameter		
Operand[1]								
...								
Operand[8]								

Tape Playback Format Response Format

FIG. 33



Unit Directory

FIG. 34

Unit ID	Unit SW Version	Protocol And Command Set
aaaaa	AAAAA	1394 TA-AV/C Standard
bbbbb	BBBBB	1394 TA-Common Application Language(CAL)
ccccc	CCCCC	1394 TA-Europe Home System(EHS)
ddddd	DDDDD	ANSI X3T10-SBP-2

Correspondence of Protocol And Command Set

FIG. 35

msb	CTS code			lsb	CTS
0	0	0	0	0	AV/C
0	0	0	0	1	CAL
0	0	1	0	0	EHS
0	0	1	1	1	(Undefined)
1	1	0	1	1	
1	1	1	0	0	Vendor Dependent Value
1	1	1	1	1	CTS

FIG. 36

Key ID	Name	Type Value	Directory
1	Descriptor Text	DL	Any One Is Possible
2	Bus Info	IDL	Root
3	Vendor	IDL	Any One Is Possible
4	Hardware Version	I	Any One Is Possible
5-B16	Undefined		
C16	Capability of Node	I	Root
D16	Node ID	L	Root
E16-1016	Undefined		
1116	Unit	D	Root or Instance
1216	Identification ID	I	Any One Is Possible
1316	Software Version	I	Any One Is Possible
1416	Dependent Info	DL	Any One Is Possible
1516-1616	Undefined		
1716	Model ID	I	Any One Is Possible
1816	Instance	D	Root or Instance
1916	Keyword	L	Any One Is Possible
1A16	Feature	D	Instance or Unit
1B16-2F16	Undefined		
3016-3716	Definition of Bus Standard		
3816-3F16	Directory Dependent Definition		

Definition of Key

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DESCRIPTION OF REFERENCE NUMERALS

- 1 ... Bus line of IEEE 1394 scheme
- 11 ... Antenna
- 12 ... Digital tuner
- 13 ... Controller in IRD
- 21 ... Controller in DVCR
- 22 ... Analog tuner
- 23 ... Tape recording and playback section
- 31 ... Controller in MD
- 32 ... Disk recording and playback section
- 71, 72, 73 ... AV device
- 81 ... Physical layer
- 82 ... Link layer
- 83 ... Transaction layer
- 84 ... Serial bus management
- 85 ... FCP
- 86 ... AV/C command set
- 91, 93 ... Command register
- 92, 94 ... Response register
- 100 ... IRD (Integrated Receiver Decoder)
- 101 ... Tuner
- 102 ... Descramble circuit
- 103 ... Demultiplexer
- 104 ... MPEG video decoder
- 105 ... Adder
- 106 ... NTSC encoder

108 ... GUI data generation section
109 ... MPEG audio decoder
110 ... Digital to analog converter 110
111 ... Central processing unit (CPU)
112 ... Interface section
113 ... Work RAM
114 ... RAM
115 ... Operator panel
116 ... Infrared light receiving section
200 ... DVCR (Digital Video Cassette Recorder)
203 ... Recording and playback section
204 ... Rotary head drum
205 ... Tape cassette
206 ... Analog to digital converter
207 ... MPEG decoder
208 ... Digital to analog converter
209 ... Interface section
210 ... Central processing unit (CPU)
211 ... RAM
212 ... Operator panel
213 ... Infrared light receiving section
201 ... Tuner
202 ... MPEG encoder
203 ... Recording and playback section
204 ... Rotary head drum
205 ... Tape cassette
206 ... Analog to digital converter

- 207 ... MPEG decoder
- 208 ... Digital to analog converter
- 209 ... Interface section
- 210 ... Central control unit (CPU)
- 211 ... RAM
- 212 ... Operator panel
- 213 ... Infrared light receiving section
- 300 ... MD device (Mini disc device)
- 301 ... Analog to digital converter
- 302 ... ATRAC encoder
- 303 ... Recording and playback section
- 304 ... Optical pickup
- 305 ... Disk
- 306 ... ATRAC decoder
- 307 ... Digital to analog converter
- 308 ... Interface section
- 310 ... Central processing unit (CPU)
- 311 ... RAM
- 312 ... Button
- 391 ... Amplifier device
- 392, 393 ... Speaker